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EXAMINER

MCDONOUGH, JAMES E

ART UNIT	PAPER NUMBER
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1793

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,510	Applicant(s) HAGEL ET AL.	
	Examiner JAMES E. MCDONOUGH	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-26 is/are pending in the application.
- 4a) Of the above claim(s) 9, 25 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-8 and 10-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/5/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Newly submitted claims 9 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The originally elected claims (invention I) are directed towards a pre-ignition agent, while claim 9 (invention II) is directed towards a thermal fuse.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product, and the species are patentably distinct (MPEP § 806.05(j)). In the instant case, the intermediate product is deemed to be useful as a pyrotechnic composition and the inventions are deemed patentably distinct because there is nothing of record to show them to be obvious variants.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 9 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Newly submitted claims 25 and 26 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

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The originally elected claims (invention I) are directed towards a pre-ignition agent, while claims 25 and 26 (invention III) are directed towards a method.

Inventions I and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by coprecipitation of the components.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 25 and 26 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The amounts of 10-50 % dipicrylaminoethyl nitrate, 40-60 % oxidizing agent and 10-60 % and 10-60 % of a second nitrogen containing compound is indefinite because

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even using the least amounts of the nitrate and the oxidizer and using the maximum of the second nitrogen containing compound gives percentages above 100 %.

Claims 5-7 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not understood how the composition can comprise a further 1-80 wt % of any additional compound based on the amounts given in claim 2, as the minimum for the three components of claim 2 are 60 %.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2-8 and 10-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fifer et al. (USP 4,379,007) in view of Clark, Ind. Eng. Chem., 1933, 25 (12), 1384-1390.

Regarding claims 2 and 4

Fifer teaches the use of an oxidizer from about 0-20 % and Fifer teaches the use of nitramine propellants including but not limited to Tetryl preferably in an amount of about 50-80 % (column 2, line 64 to column 3, line 10).

Although, Fifer does not teach the use of dipicrylaminoethyl nitrate, Fifer does teach the use of Tetryl. However, because Clark teaches analogs of Tetryl such as Pentryl (trinitrophenylnitraminoethyl) made by nitration of 2,4-dinitrophenylamino ethanol, Clark further teaches bis-dinitrophenylaminoethanol, which upon nitration would form dipicrylaminoethyl nitrate, and the reference teaches that this is a compound of interest to be studied later, it would have been prima facie obvious to one of ordinary skill in the art at the time of invention to modify the reference of Fifer, by substituting dipicrylaminoethyl nitrate for Tetryl, as suggested by Clark, with a reasonable expectation of success.

Fifer teaches that nitroguanidine is a nitramine such as Tetryl (column 3, lines 3-12), and the courts have held that it is prima facie obvious to combine two or three compositions, each taught for the same purpose to yield a third composition for that very purpose. *In re Kerkhoven*, 205 USPQ 1069, *In re Pinten*, 173 USPQ 801, and *In re Susi*, 169 USPQ 423.

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With respect to the limitation of having an adjustable deflagration point controlled based on the composition, it is noted that all compositions that are capable of deflagration would have an adjustable deflagration point as this physical characteristic will be determined by the specific ratios of the ingredients used, the specific ingredients used, the particle size of the ingredients used, etc, and since the reference(s) reads on or makes obvious the other limitations of the claimed composition, and since the properties of the composition are inseparable from the composition itself, it would be expected that the compositions of the reference(s) would meet these limitations, absent any evidence to the contrary.

Regarding claim 3

Fifer teaches ammonium nitrate as the oxidizer (column 2, line 64-66).

Regarding claims 5, 12 and 14

Fifer teaches the use of about 0-20 % metal (reducing agent), such as aluminum (column 2, lines 64-66).

Regarding claims 6, 7, and 17-20

Fifer teaches the use of up to 50 % binder such as nitrocellulose (column 2, lines 55-61), which is also a high energy additive.

Regarding claims 8 and 22

Fifer teaches that it is known to use salicylates, such as sodium salicylate, that are effective with nitrocellulose based propellants (column 1, lines 43-55), and would act as a combustion moderator or processing aid.

Regarding claims 10 and 11

Fifer teaches the use of an amount of 50-80 % of a nitramine propellant, and it is prima facie obvious to combine two compositions into a third composition as stated above, and if one skilled in the art was to equally split this between the two nitrogen containing components this would leave 25-40 % of one of the nitrogen containing compounds such as dipicrylaminoethyl nitrate, reading on or at least making obvious the claims. Furthermore, it is noted that the optimal amount of dipicrylaminoethyl nitrate would have been determined through routine experimentation in the art in an effort to optimize the composition for a desired use, absent any evidence of criticality or unexpected results.

Regarding claim 13

Although, Fifer does not explicitly teach the use of 1 to 15 wt % of the reducing agent, Fifer does teach the use of about 0-20 % metal (reducing agent), and it is the interpretation of the examiner that about 0 % reads on 1 % or at least makes this obvious. Further the optimal amount of reducing agent would have been determined through routine experimentation in the art in an effort to optimize the composition for an intended use, taking into consideration such factors as the flame temperature, burn rate, ignition temperature, etc., absent any evidence to the contrary or any showing of unexpected results.

Regarding claims 15 and 16

Fifer teaches that typical nitramine propellants may consist of 60-80 wt % nitramine and the remainder being composed of an energetic binder such as

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nitrocellulose, this reads on 20-40 wt % binder, reading on or at least making obvious the instant limitation.

Regarding claim 21

Fifer teaches the use of sodium salicylate, which can function as a combustion moderator, especially with nitrocellulose, and although Fifer is silent as to the conventional amounts of combustion moderator to use, it is noted that combustion moderators/catalyst are typically used in low amounts. Further the amount of combustion moderator used would have been determined through routine experimentation in the art in an effort to optimize the combustion properties of the compositions, such as the combustion speed and the sensitivity (i.e. ignition temperature), absent any evidence of unexpected results or criticality.

Regarding claims 23 and 24

The deflagration point is not seen to further limit the composition, as this is an intended use, and would be dependant on factors other than what is claimed (i.e. particle size, homogeneity of mixing, etc.). Further, since the composition of the reference appears to read on or make obvious the instant invention, and properties are inseparable from a composition, it would be expected that the reference composition would meet these limitations, absent any evidence to the contrary, or a showing of unexpected results.

Response to Arguments

Applicants argue against the 103 rejection over Fifer in view of Clark.

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Applicants argue that Fifer does not disclose a composition including 10-50 wt % dipicrylaminoethyl nitrate, from 40-60 wt % of an oxidizing agent, and 10-60 wt % of a nitrogen containing compound other than dipicrylaminoethyl nitrate and the oxidizing agent, and that for example Fifer only disclose using amounts of oxidizer from about 0-20 wt %. While this may be true, this is not persuasive because other components of the composition can technically be considered as oxidizers (i.e. nitrocellulose, sodium salicylate). Further the claim amounts are indefinite (see above).

Applicants argue that Fifer does not disclose a thermal pre-ignition agent.

This may be true, but it is not persuasive, as this is an intended use, and does not serve to add to the patentability of a composition claim. With respect to the deflagration point, this is also an intended purpose, and is not based solely on claimed features, as argued above.

Applicants remaining arguments have been fully considered, but are not persuasive for the same reasons given above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES E. MCDONOUGH whose telephone number is (571)272-6398. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J.A. LORENZO/
Supervisory Patent Examiner, Art Unit 1793

JEM 11/27/2009